# CIVIL TECH LABS

Accredited by NABL as per ISO/ IEC 17025 : 2005

# 5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027

Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654


To,

Assistant Executive Engineer
Kodegahalli Sub Division,
BBMP.

23rd April 2015

Dear Sir,

**Sub:** Testing of Bituminous Concrete.

As requested, the required tests were carried out for the Bituminous Concrete the samples supplied by you, for the work of **'Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division..'**

AE-1

Please find the enclosed Test Report of the above.

**Thanking You,**
**For Civil Tech Labs**

Khushboo

**(KHUSHBOO L.)**
**Quality Manager**

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# CIVIL TECH LABS

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## TEST REPORT

**TEST ON DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS CONCRETE MIX-GRADE 2**

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 23/04/2015 |

**A)**

| Sl. No. | Test | Test Method | Technical Reference |
|---|---|---|---|
| 1 | Extraction of mineral aggregate | **Test Method A (Centrifuge Method)** | **ASTM: D2172/ D2172M-11** |
| 2 | Determination of amount of mineral matter/fines in the extract | **Ashing Method** | |

**B)**

**Specification: As Per MORTH (4th Revision) Table 500-18, Bitumen Content for BC Grade-2 is 5% to 7%**

| Sl. No. | Description | Values |
|---|---|---|
| 1 | Weight of bituminous mixture before extraction test, **$W_1$ g** | **2000.00** |
| 2 | Weight of mineral aggregate obtained from centrifuge extractor, **$W_2$ g** | **1874.56** |
| 3 | Weight of mineral matter in the total volume of extract (by ashing), **$W_3$ g** | **13.52** |
| 4 | Total weight of aggregate in the bituminous mixture, **$W_4$ g = ($W_2$ +$W_3$) g** | **1888.08** |
| 5 | Total weight of Bitumen extracted from the mixture, **$W_5$ g = ($W_1$-$W_4$) g** | **111.92** |
| 6 | Bitumen content in %, **($W_5$/$W_1$) %** | **5.60** |

| Remarks | Satisfies the requirement. |
|---|---|

**Note:**

1. The results relate only to the items tested.
2. Report shall not be reproduced except in full, without the written approval of the lab.
3. Any correction invalidates this report.
4. The results are based on the test conducted on samples supplied by the customer.

Lab Incharge
Civil Tech Labs

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# TEST REPORT

## GRADATION TEST ON BITUMINOUS CONCRETE MIX GRADE - 2

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 23/04/2015 |
| **Technical Reference** | IS : 2386(Part I)–1963 (Reaffirmed 2011) |

| | Sample-2 | | |
|---|---|---|---|
| **IS Sieve Designation (mm)** | **% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-18 for BC Grade-2** | **Actual % By Weight Passing IS Sieve** | **Remarks** |
| 19 | 100 | **100** | **Satisfies the requirements** |
| 13.2 | 79-100 | **97.4** | |
| 9.5 | 70-88 | **82.6** | |
| 4.75 | 53-71 | **62.7** | |
| 2.36 | 42-58 | **45.3** | |
| 1.18 | 34-48 | **37.8** | |
| 0.6 | 26-38 | **31.6** | |
| 0.3 | 18-28 | **22.8** | |
| 0.15 | 12-20 | **17.3** | |
| 0.075 | 4-10 | **6.9** | |

AE-I

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Khushboo

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# TEST REPORT

## GRADATION TEST ON BITUMINOUS CONCRETE MIX GRADE - 2

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 23/04/2015 |
| **Technical Reference** | IS : 2386(Part I)–1963 (Reaffirmed 2011) |

| | Sample-1 | | |
|---|---|---|---|
| **IS Sieve Designation (mm)** | **% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-18 for BC Grade-2** | **Actual % By Weight Passing IS Sieve** | **Remarks** |
| 19 | 100 | **100** | **Satisfies the requirements** |
| 13.2 | 79-100 | **98.2** | |
| 9.5 | 70-88 | **83.6** | |
| 4.75 | 53-71 | **62.5** | |
| 2.36 | 42-58 | **46.2** | |
| 1.18 | 34-48 | **38.6** | |
| 0.6 | 26-38 | **32.8** | |
| 0.3 | 18-28 | **21.7** | |
| 0.15 | 12-20 | **18.2** | |
| 0.075 | 4-10 | **6.7** | |

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T-2654


To,

Assistant Executive Engineer
Kodegahalli Sub Division,
BBMP.

20th April 2015

Dear Sir,

**Sub:** Testing of Bituminous Macadam.

As requested, the required tests were carried out for the Bituminous Macadam the samples supplied by you, for the work of **'Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division.'**

Please find the enclosed Test Report of the above.

AE-I

**Thanking You,**
**For Civil Tech Labs**

Khushboo

**(KHUSHBOO L.)**
**Quality Manager**

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## TEST REPORT

### GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of the Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 20/04/2015 |
| **Technical Reference** | IS : 2386(Part I)–1963 (Reaffirmed 2011) |

| | Sample-1 | | |
|---|---|---|---|
| **IS Sieve Designation (mm)** | **% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2** | **Actual % By Weight Passing IS Sieve** | **Remarks** |
| 26.5 | 100 | **100** | **Satisfies the requirements** |
| 19 | 90-100 | **98.6** | |
| 13.2 | 56-88 | **74.2** | |
| 4.75 | 16-36 | **27.3** | |
| 2.36 | 4-19 | **17.5** | |
| 0.3 | 2-10 | **8.8** | |
| 0.075 | 0-8 | **6.9** | |

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# TEST REPORT

## GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of the Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 20/04/2015 |
| **Technical Reference** | IS : 2386(Part I)–1963 (Reaffirmed 2011) |

| | Sample-2 | | |
|---|---|---|---|
| **IS Sieve Designation (mm)** | **% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2** | **Actual % By Weight Passing IS Sieve** | **Remarks** |
| 26.5 | 100 | **100** | **Satisfies the requirements** |
| 19 | 90-100 | **99.7** | |
| 13.2 | 56-88 | **73.6** | |
| 4.75 | 16-36 | **26.8** | |
| 2.36 | 4-19 | **16.5** | |
| 0.3 | 2-10 | **7.8** | |
| 0.075 | 0-8 | **6.9** | |

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# TEST REPORT

## TEST ON THE DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS MACADAM MIX-GRADE 2

| | |
|---|---|
| **Name & Address of the Customer** | AEE, Kodegahalli Sub Division, BBMP |
| **Name of Work** | Improvements and Asphalting to road in DEO-Residency layout and surroundings in ward no. 07, (Byatarayanapura) Kodegahalli Sub Division. |
| **Name of the Agency** | M/s. Sathy Construction Bangalore. |
| **Date of Testing** | 20/04/2015 |

**A)**

| Sl. No. | Test | Test Method | Technical Reference |
|---|---|---|---|
| 1 | Extraction of mineral aggregate | **Test Method A (Centrifuge Method)** | **ASTM: D2172/ D2172M-11** |
| 2 | Determination of amount of mineral matter/fines in the extract | **Ashing Method** | |

**B)**

| **Specification: As Per MORTH (4th Revision) Table 500-4 BM-Grade -2, Bitumen Content for BM Grade-2 is 3.3 % TO 3.5 %** | | |
|---|---|---|
| **Sl. No.** | **Description** | **Values** |
| 1 | Weight of bituminous mixture before extraction test, **$W_1$ g** | **2000** |
| 2 | Weight of mineral aggregate obtained from centrifuge extractor, **$W_2$ g** | **1920.56** |
| 3 | Weight of mineral matter in the total volume of extract (by ashing), **$W_3$ g** | **11.24** |
| 4 | Total weight of aggregate in the bituminous mixture, **$W_4$ g = ($W_2$ +$W_3$) g** | **1931.8** |
| 5 | Total weight of Bitumen extracted from the mixture, **$W_5$ g = ($W_1$-$W_4$) g** | **68.2** |
| 6 | Bitumen content in **%, ($W_5$/$W_1$) %** | **3.41** |

| | |
|---|---|
| **Remarks** | **Satisfies the requirements.** |

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